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ABSTRACT

Many learning disabled students attending Avocado Elementary School in Homestead, Florida, were unable to write legibly when taught with available cursive handwriting programs. To redress the problem, a complete, sequential cursive handwriting program was devised for use with learning disabled and other students. The program combined tracing and behavior modification techniques and was continued for 9 months. Of all students included in the program, 75 percent in the second grade and 100 percent in the third grade were able to produce average or above average cursive handwriting samples 80 percent of the time. The remaining 25 percent of the second grade students achieved fair cursive handwriting samples. After intervention, participating students had adequate scores on the five subtests of the Slingerland Screening Test for Identifying Children with Learning Disabilities. A checklist of written expression is appended. (RH)

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A CURSIVE HANDWRITING SKILLS PROGRAM

FOR LD STUDENTS TO BE USED BY

REGULAR AND LD TEACHERS

PS 015491

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N O V A U N I V E R S I T Y

A Cursive Handwriting Skills Program for LD Students to be Used by Regular and LD Teachers

by

Ida L. McMillan
262-48-6629

Cluster XIII

A Practicum Report Presented to the Ed.D.Program
in Early Childhood
in Partial Fulfillment of the Requirements
for the Degree of Doctor of Education

NOVA UNIVERSITY

1985

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ABSTRACT

A Cursive Handwriting Skills Program for LD Students to be used by Regular and LD Teachers.
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Descriptors: Handwriting/ Writing Disorders/ Disorders of Written Language/ Dysgraphia/ Cursive/ Penmanship/ Writing Disabilities/ Revisualization/ Visual-Motor Integration/ Formulation and Syntax/ Written Communication/ Written Formulation.

This practicum addressed the problem of devising a complete sequential cursive handwriting program to be used with Learning Disabled (LD) students or regular students needing remediation and who exhibited difficulty learning to use cursive handwriting with currently published handwriting programs. A search of the literature found that inadequate handwriting skills continued to be cited as persistent problems even though a variety of instructional and remedial approaches were used by teachers.

The writer's goals were: (1) Production of quality cursive handwriting on demand, at or above the average level, 80% of the time, without copying a cursive sample when compared with the Zaner-Bloser Evaluation Scales (1984) by second and third grade students ; (2) Inclusion of adequate depth and sequence needed for mastery of quality cursive handwriting when rated by the penmanship section rating scales of the Checklist of Written Expression; (3) Establishment of a self-checking program using a plastic overlay of excellently formed letters to enable students to progress at their own speed.

Relative standards of performance were met for all objectives by the students who participated in the program. Seventy five percent of the second graders and 100 percent of the third grade students were able to produce an average or above handwriting sample 80 percent of the time. The remaining 25 percent did increase their handwriting ability but did not achive an average score 80 percent of the time. All students exhibited pleasure and increased self-confidence as a result of their efforts and increased ability to produce quality cursive handwriting.

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CHAPTER I

INTRODUCTION

Author's Work Setting, Role and Responsibilities

The author's work setting was Avocado Elementary School, a medium sized school, with 635 students enrolled. It was integrated and made up of students from many walks of life. The racial make-up of students was approximately 20 percent black,3 percent Hispanic and 77 percent other (white). Most of the students lived within walking distance of the school. However, there were three bus loads of children brought into the school daily. One of these buses carried mainly black students and a second bus carried about one third white and two thirds black students. The third bus was a combination of Hispanic, black, and white students who lived in a nearby trailer park. The Hispanic population was a mixture of Puerto Rican, Mexican migrants, Haitian and one or two Mariel refugee families from Cuba. The majority of the Cuban immigrants settled in downtown Miami. The Homestead area Hispanic population was mainly migrant farm workers from Mexico who followed the harvest season up and down the east coast of the United States with some Cuban or Haitian families included.

Within the Avocado Elementary School there were

seven classes for Exceptional Students plus one speech and two compensatory education classes. There were also classes for English for Students of Other Languages (ESOL) which were taught to students who were not proficient in the English language. The Exceptional Student Education (ESE) classes consisted of one varying exceptionalities (VE) class, two learning disabilities (LD) classes, one class for students classified as educably mentally handicapped (EMH), and three classes for students considered "gifted". All of the classes were considered part-time classes because the students had a homeroom class and spent much of their time in the regular classes.

The school was also served by a music teacher, an art teacher, and one fulltime and one-half time physical education teachers. All classes were held in self-contained classrooms, most of which had their own patio area adjoining the classroom. The kindergarten, first, second and third grade classes had their own bathrooms within the classroom area. Fourth and fifth grades shared two girls' and two boys' bathrooms. The ESE classes used a bathroom outside the cafeteria and were housed in a separate relocatable building. There was a large library and media center with its own specialist. The school also supported a principal, an assistant principal, three full-time office workers and four aides who worked seven hours each day with students and teachers.

The school wide parent-teacher association (PTA) was especially large and had hard working, concerned parents and teachers as members. The members were always ready to contribute to the school welfare and often initiated and carried through new programs which were of benefit to the whole school program. An example of this was the buying of a disc drive for a school owned computer so that it could be added to our media center for the whole school to use.

The author was employed as a teacher of students with Varying Exceptionalities (VE). These were considered mildly handicapped students and were served only part-time, one to two hours each day in the VE classroom. The majority of the students were labeled LD, however, occasionally a student who was considered emotionally handicapped (EH) was included as well. The students were in all grade levels from kindergarten through grade five with the majority in kindergarten through third grade. These students were working two to three grade levels below their actual grade placement. The author's role was to act mainly in a tutoring type of setting. The students were resourced into the author's classroom from their regular classes but for no more than twelve hours each week. The resource class population averaged twenty students per day. These students were served on a daily basis with the amount of time dependent upon their academic deficits and personal needs. Some students were taught reading, writing,

language arts and arithmetic and other students attended for only one or two subjects but not all subjects. Material was often presented with a unit approach covering a science, health or social studies subject.

Description of Area of School Location and Population

Avocado Elementary School was located in South Dade County, Florida in the city of Homestead. Homestead's population in 1980 according to statistics from the Homestead Chamber of Commerce was 20,668 with a racial breakdown as follows: 14,009 white, 5,278 black and 1,387 other with 3,315 Hispanic as part of the black and white figures. Homestead was located 30 miles south of Miami, Florida on the southeast coast of the state of Florida. The mean income level in 1980 was listed as $10,833 which was approximately that of the mean of the total United States population. The major area in which Avocado Elementary pupils lived has a mean family income of approximately $22,500. This placed the socio-economic level of the school as slightly higher than average.

The area around Avocado Elementary School was considered on the outskirts of the city of Homestead, but still it was an urban type of community. There were mainly individual homes, but there were apartments and several low cost housing units interspersed here and there within

the community. There was a Dade County Park with a public pool within the two mile radius of the school. The school itself had an all white population until busing was used to integrate the school.

Traditionally this area consisted of working class families with a few business people and professionals scattered within the community. Most of the families were considered native Homesteadites although ,some were families from the nearby Air Force Base who had settled in the area.

Dade County itself was the largest county in the state of Florida and as of the 1980 census had a population of over two million. The major city in the county was Miami which accounted for almost one million of the population. The rest were scattered among the smaller cities and the rural or agricultural areas of the county. Surrounding Homestead to the west, south and east were the agricultural areas of the county. This area was considered the "Bread Basket" of the United States during the winter months because much of the country's fresh vegetables were produced in this area during that time.

As a result of the abundance of farming occurring in Dade County each year many migrant farm workers throng to this area to live and look for work. During the farming time of year they lived in Migrant Labor Camps. There were three large camps in the area, but during this time none

of the children living in these camps attended Avocado Elementary School. Sometimes the families decided to stay in this area. Then they looked for more permanent types of work and settled in the community housing areas. This accounted for the largest percentage of Hispanic students in the school. Some of these students were found to have LD problems and were, therefore, included in the multiethnic population of the author's resource classes.

The majority of the Cuban and Haitian population which came to the Miami area have settled in the downtown area due to inadequate public transportation in outlying areas and very adequate public facilities for welfare, etc. within the city of Miami. This left relatively few living in the Homestead area.

CHAPTER II

STUDY OF THE PROBLEM

Problem Statement

Many learning disabled (LD) students were unable to acquire legible cursive handwriting adequately when taught with currently available handwriting programs. The letters were introduced too rapidly and too randomly for these students to master the writing skills required in the time allocated, daily or by the semester. The students felt pressured and inadequate, thereby building up frustrations which led to failures.

Some prerequisites which the students needed in order to be included in this program were as follows: (1) ability to hold pencil correctly, (2) acceptable manuscript writing when copying material from a chalk board or chart tablet, (3) ability to see and reproduce material correctly using manuscript handwriting, (adequate visual discrimination and memory with basic perceptual capabilities and fine motor control), (4) illegible or inadequate cursive handwriting skills.

Often teachers pulled parts and pieces from many available programs and added needed repetition as creatively and innovatively as possible. This was an

extremely time consuming, expensive and a difficult task which required the teachers to have outstanding diagnostic skills.

Therefore, this practicum approached the problem of devising a complete sequential cursive handwriting program to be used with LD students or those needing special help. A management system for students was included whereby they used a self-checking device to estimate success and progress through the program at their own rate as they achieved success at each sequence level. This self-checking was monitored by the teacher at unspecified times to assure quality work.

Evidence of the Problem

There appeared to be a serious need for a well developed sequentially introduced handwriting program which could be used with LD students or regular students needing remediation and who exhibited difficulty learning to use cursive handwriting with currently published handwriting programs. Inadequate handwriting skills continued to be cited as persistent problems for LD students even though a variety of instructional and remedial approaches were used by their teachers. Indeed this large variety of approaches may be part of the problem because teachers were faced with the task of selecting

those most appropriate for their students (Gerard and Junkala, 1980).

Teachers needed a framework to help them decide on appropriate instructional approaches. In order to do this the teacher had to diagnose whether the student had an input problem (visual memory or discrimination), an output problem (fine motor coordination), or an associational problem (visual-motor integration). The teacher then had to choose the appropriate material needed to remediate the problem. Gerard and Junkala (1980) found that choosing just any method or using a standard method of teaching handwriting was not much better than using no method at all to teach LD students handwriting.

Daily samples of illegible handwriting were available to attest to this need. Repeated errors or ambiguities in letter formations and numerous erasures suggested a need for further teaching with attention to specific areas of difficulty. Samples of handwriting taken by the author after cursive writing was taught for a year or longer indicated the difficulties these LD students were exhibiting. A comparison of reading and writing skills reinforced the fact that reading and writing disabilities often were combined. Analysis of handwriting specimens using the Diagnostic Evaluation of Writing Skills (DEWS) indicated agreement between reading levels and writing levels (Weiner, 1980).

Also, persistent complaints from the regular classroom teachers and parents to the author reinforced the need for a better and more effective approach to teaching handwriting skills to the LD student in school. A follow-up program of homework assignments in the area of handwriting was needed as well. This inclusion of homework assignments in the handwriting program ensured added parental knowledge and support in school activities.

Analysis of the Causes

Many students first response to cursive handwriting was "I can't do that" or "It's too hard". However, when students began to master some of the letters they realized that they could acquire some of the skills with little difficulty. An indepth handwriting program was put into the curriculum at the first sign of difficulties rather than waiting until they had begun to fail by the standard methods of teaching these skills. The students often realized that legible writing was a tool for learning while poor writing was a barrier to learning. Even in this age of typewriters and magic word processors, adequate handwriting has remained a necessary achievement. Most adults could not avoid writing in many forms, such as official applications and forms to be completed, as well as letters and notes which have to be written by hand (Lovitt, 1975).

Several examples of the need for legible handwriting were: (1) incomplete notes in later grades as a result of inadequate handwriting speed which leaves gaps in understanding content areas; (2) illegible examination papers which caused biased test grades in composition and spelling areas where words and letters have been left out or incorrectly written even when the student has knowledge of the correct method; (3) inability to plan through mental operations alone created the need for the ability to write legible notes or outlines. However, handwriting was often treated jokingly and improvement was merely alluded to with the teacher's comment "Write Neater!" at the top of a paper (Hagin, 1983).

Since handwriting was an individual skill that was difficult to teach students at any age, it was often even more difficult to teach to the LD student. Through the use of stimulating lessons, practical applications, and meaningful, creative activities, the student became self-motivated to improve his writing skills. Communication was the final goal of the handwriting program (Davis and Miller, 1983).

Related Literature

Doris J. Johnson and Helmer F. Myklebust (1967) in their book on learning disabilities stated that their were many levels of writing disorders, the most involved being

called "dysgraphia". This was the inability to copy letters or numbers. Johnson and Myklebust stated that older children sometimes reproduced a legible word, but often distorted the sequence of movements when they wrote. Writing involved integration of information from the visual modality to the motor modality. When this skill or ability was lacking illegible writing resulted.

A report on a controlled study recommended using the Diagnostic Evaluation of Writing Skills as a method of identifying students requiring special remediation, but did not indicate what special remediation would be used (Weiner, 1980). Weiner also recommended comparisons with other classmates as a method of deciding "good" penmanship.

It was felt by James A. Poteet (1980) that penmanship was but one of four components of written expression. These four components were 1) penmanship, 2) spelling , 3) grammar and 4) ideation. Poteet also felt that those who would like visible examples of varying degrees of handwriting quality should look at more formal examples and suggested the Zaner-Bloser Evaluation Scales (1984) for comparison or scoring purposes. Poteet placed penmanship first because this must be legible before the other three components of handwriting could come into play. A Checklist of Written Expression was devised by Poteet to determine appropriate instructional strategies for the student being assessed.

One method of determining a student's problem areas whether in handwriting or another area of learning was to do a complete analysis of the problem. Towle and Ginsberg (1975) indicated that there were two techniques which could be used to sort out the exact problem. One of these was to do a task analysis on the skills to be taught. This was the process of isolating, describing and sequencing all the necessary subtasks needed to enable a student to perform a given task. When this was done individualized remediation would be assigned to the student.

The second technique was to do a functional analysis to identify relationships between the behavior desired and the environmental events surrounding the events. For instance, a child may have crowded his handwriting on a line simply because there was not enough room on the line to place the total sentence rather than because he was unable to visually adjust the words to the spacing.

LD students often fail in their schoolwork and function well below their potential as a result of their specific reading and writing handicaps. Many times their difficulty appeared to be in the recollection of the way in which letters and words should be written. The assumption was that integration of the motor skills and the visual-perceptual concept of the written work was impaired creating a writing disability to go along with their

reading disability (Simpson and Abromovitch, 1980). This study attempted to diagnose and classify specific disabilities in reading-writing disabled children and select a remedial strategy most suitable for each child.

In the past, school children were taught cursive writing exclusively and included the initial writing experience in the first grade. Recently manuscript writing has been taught first, and only after mastery of the manuscript style, was cursive writing introduced. With legible handwriting used as an aid in spelling and reading it was often one of the primary goals for the LD child. Many reasons have been postulated to support the exclusive use of cursive writing in schools. However, Early, et al. (1976) did not find significant differences in a child's reading and spelling performance as a result of the exclusive use of cursive writing in the first grade. However, some support was found for the use of cursive writing with the result being that significantly fewer reversal and transposition errors occurred. This indicated use of cursive writing as a remedial tool for LD students at an early age.

Teaching disabled writers to communicate with their writing after the basic skills have been taught was vital. Giordano (1982) felt that writing instruction may be used to establish rapport between students and instructors. A method called CATS (Copy, Alter, Transform, Supply)

exercises was used. This method used interrelated exercises as follows: 1) copy a sentence, 2) alter one word in the sentence and copy again, 3) grammatically transform the sentence, and 4) supply a response to the sentence. An example of this may be: I like ice cream. You like ice cream. Do you like ice cream? Yes, I like ice cream. Giordano felt that this method developed elementary writing skills in a communicative format.

In 1983, Giordano recommended an integrated remedial writing segment in reading programs which expanded the CATS formula into other areas and developed communicative writing skills as a complementary format. These areas were automatic writing, story writing, outlining, paraphrasing, projection, and correspondence. All of these areas employed reading the story that had been written back to the instructor and was used in conjunction with the specific program of remedial reading instruction that each teacher employed.

CHAPTER III.

ANTICIPATED OUTCOMES AND EVALUATION INSTRUMENTS

Statement of General Goals

The LD and regular teachers were given a consistent cursive handwriting program that was to be used to remediate children with poor cursive handwriting skills. Parents shared responsibility for the program through the assignments that were completed by the children at home.

Self-checking plastic overlays were employed by the students which enabled them to check their own work and progress through the program at their own rate. These overlays were used to check both the in class work and the homework assignments.

Terminal Performance Objectives

The following objectives were achieved as a result of this proposal (Table 1).

(1). The second and third grade students completed the program and were able to produce quality cursive handwriting on demand, at or above the good level, 80 percent of the time, without having to copy a sample of the required specimen, when compared with the Zaner-Bloser Evaluation Scales (1984).

(2) Adequate depth and sequence was included so the students involved acquired skills needed for complete mastery of quality cursive handwriting at or above the average level, 80 percent of the time when rated with the Adaptation of the Checklist of Written Expression (Appendix A).

(3). A self-checking program was set up so that the students progressed through the program at their own speed as they achieved success at the average level, 80 percent of the time at each sequence level. This was monitored closely by the author. Each level was numbered sequentially and as success was achieved at one level the student moved to the next level. This new level may have been a new letter or a new combination of the previous letters. The same self-checking program was used for homework assignments with mastery at the average level required, 80 percent of the time.

Evaluation Instruments

To determine the student's level of basic prerequisite skills available for use in legible handwriting (visual discrimination and memory for letter forms and word forms, visual-visual perception-memory, visual-motor copying, and visual-motor/visual-perceptual memory) the first five subtests of the Slingerland Screening Tests for Identifying

Children with Specific Language Disability were administered to each child at his own operating level. Those students with scores of less than 12 errors on each of the first five subtests which had been defined as having the necessary pre-requisite skills were included in the proposed program. High error scores on these five subtests have shown significant correlation with poor handwriting (Kaufman and Biren,1976-77).

To determine areas which needed remediation, student's cursive handwriting samples were evaluated with an adaptation of the penmanship section of the Checklist of Written Expression (Poteet, 1980). Samples were evaluated by looking at spacing of letters, words, and sentences on the page as well as slant and formation of letters, pressure on the page and pencil grip. An analysis of the scores was then carried out to determine specific areas for remediation using a five point rating scale (1 = poor to 5 = excellent). Those with scores of 1 or 2 were included in this practicum (Table 1).

In order to measure the quality and amount of progress made by each student involved in the practicum, samples were compared with the Zaner-Bloser Evaluation Scales (1984) before remediation was begun and those rated poor or fair were included in this practicum. During the remediation period and again at the end the handwriting was evaluated with this same scale (Table 1).

Table 1
Consolidation of goals, evaluation instruments and mastery levels.

GOAL DESIRED	EVALUATION INSTRUMENT	CRITERIA FOR MASTERY
PRETESTS (THOSE WITH MASTERY WILL NOT BE INCLUDED)		
Determine level of prerequisite skills	Slingerland Screening Tests for Identfying Children with LD	Less that 12 errors per subtest
Determine need for remediation	Adaptation of Checklist Written Expression (Poteet, 1980)	Scores of 1,2
Determine need for remediation	Zaner-Bloser Evaluation Scales (1984)	Scores of 1,2
POSTTEST (MASERY OF GOALS WILL INDICATE SUCCESS)		
Good Handwriting	Zaner-Bloser Evaluation Scales (1984)	Average or Above (3,4,5) 80 percent of time
Quality Hand-writing	Adaptation of Checklist of Written Expression	Average or Above (3,4,5) 80 percent of time
Self-checking Program/ Homework assignments	Plastic overlay of Excellently formed letters	Average or Above 80 percent of time

Performance criteria of less than the average or above level 80 percent of the time based on the Zaner-Bloser Evaluation Scales (1984) and the Adaptation of the Checklist of Written Comprehension (penmanship section only) (Poteet, 1980) with a five point rating scale were used to evaluate handwriting prior to assignment to the program. During implementation handwriting was evaluated using these criteria by taking samples on a random basis, at times unknown to the students. The samples taken during implementation were acquired by having the students copy a cursive sample from a chart to the paper. After proficiency (three consecutive 80 percent, average or above days) was reached on all lowercase letters and words, the intervention was shifted to uppercase letters in combination with words using uppercase and lowercase letters. Upon completion of the program samples were taken by having the students transpose writing from a manuscript sample to the cursive form on their paper and again evaluated using the established criteria (Table 1).

Each day at the end of the writing task each child was given a blank unlined 8" by 11" sheet of newsprint and was asked to write the letters or words with his eyes closed. This was merely a culminating activity to be included as an aid to help increase the student's motor memory (Fernald, 1943) for the words and letter forms he

had been using that day.

One page of homework was assigned each day, Monday through Thursday evening, on the letter or group of letters each child was working on that day. These were checked by the student and reviewed by the teacher upon return using a handwriting plastic overlay to insure correct letter formation. The average (60 percent) level was considered acceptable handwriting (Table 1).

To encourage return of homework and increase accuracy in classroom work a behavior modification program was enacted. Acceptable homework received a smiling face to be placed on a wall chart with a reward to be given to each student with 25 or more smiling faces at the end of each semester. Stars were earned daily for acceptable work and was later exchanged for small gifts such as pencils and erasers.

CHAPTER IV

SOLUTION STRATEGIES

Possible Alternative Solutions

In the article titled Part II: Specific Research Recommendations and Suggestions for Practioners (Lovitt, 1975) the section on penmanship, shaping , modeling, and drill, recommended having the students compare and evaluate their work against the teacher's letters as an intervention strategy. "Selective" checking of student's work was also suggested as a means of determining progress.

A self-instructional procedure was recommended as a means of improving an LD student's handwriting performance (Graham, 1983). This procedure consists of verbally directing the task to be achieved. The students then learned to verbalize each task as it was accomplished. This method resulted in only slight gains with the gains being mainly situation specific.

Verbalization as a key to basic copying skills (Kovitz, 1982) was used as an aid for the hyperactive, distractible, and impulsive student as well as for the auditory learner who related more easily to the sound of a symbol than to the visual appearance. Along with the verbalization a prompt and fade method was suggested. Dots

were placed under the letters. The child then pointed to the letter and verbalized the name of the letter before he wrote the letter in the new spot on the same line. Slowly the dots and pointing were eliminated and finally, the verbalization was eliminated or at least subvocalized so as not to disturb others in the classroom.

When examining the alphabet for shape and details of each of the letters many more similarities than differences were observed. Letters were therefore grouped according to these similarities in the following groups: 1) o, c, a, g, and q; 2) e, l, t, i, j, and p; 3) d, b, h, k, and f; 4) m, n, and x; 5) u, v, w, r, and s (Getman, 1983). Another such grouping was as follows: 1) i, u, w, t, r, s; 2) n, m, v, x; 3) e, l, b, h, k, f; 4) c, a, g, d, q; 5) o, p, j; and 6) y, z (Cieslicke, 1980). These two studies also recommend several types and sizes of letters (up to six inches high) and surfaces (paper, chalk board, lined writing boards, etc.) to be used for practicing handwriting skills. Both felt that the size of the letters should not be reduced until there was definite observable success with no hesitancy apparent when writing the letter being practiced.

Feedback from the teacher to the child when evaluating their handwriting was essential. If the feedback was negative it destroyed spontaneity and created inhibition in the child. However, appropriate feedback provided an

opportunity for meaningful intervention. Evaluation was not necessary with every assignment, but began with the pre-writing stage. The feedback was individualized with the focus on a small number of structural errors. The teacher strove for a positive rather than a negative tone and maintained an awareness of the students' feelings and interests (Simms, 1983).

Solution Selected

A consistent cursive handwriting program to be used with LD students was not currently available, therefore,one was devised using a basic tracing technique with sufficient and varied repetition built in to assure success.

This program was to be used with LD or regular classroom second and third grade students needing intensive remediation of their writing skills. It was used in this practicum by students in the author's LD resource classroom who were also in regular second grade and third grade classrooms.

The program continued over a period of nine months. Depending upon a students' needs they progressed in a slow, sequential manner with sufficient repetition built into the program to assure success by the students.

A behavior modification program was enacted to

encourage good workmanship in class and in the homework assignments. Daily stars were earned for good work in class and smiling faces were earned for homework completed and returned on time. The stars and smiles were redeemed for various types of merchandise and rewards.

Report of Action Taken

Students in the author's LD class were tested to be considered for the study using the first five subtests of the Slingerland Screening Tests for Identifying Children with Specific Language Disabilities (Slingerland, 1969) to be sure adequate prerequisite skills were available (Table 2).

After evaluating the Screening test results students were selected to be included in the practicum study and base line samples of handwriting were taken. The first samples were considered and evaluated as a pretest using the Adaptation of the Checklist of Written Expression (Appendix A) and the Zaner-Bloser Evaluation Scales (1984).

Twenty minutes of daily instruction and practice with selected students (seven third graders and 12 second graders) using the following methods and materials was begun. The program was included as part of the author's total handwriting program.

Assignment of one page of handwriting was made using specially designed handwriting paper (red, yellow, green,

black lines) as homework daily each Monday through Thursday. When returned these were checked using a plastic overlay which showed correct letter formation. An evaluation of the student's classroom handwriting samples was carried out weekly or as often as needed to measure progress throughout the program.

Complete posttesting and evaluation of the program was carried out at completion of program (Tables 3 and 4).

Curriculum Items

Instructions to teachers:

(1). All objectives requiring tracing had materials enclosed in plastic envelopes and the tracing was done with washable markers. Special handwriting paper was designed by the author and reproduced for use by the students using four colors of lines. The line color sequence was red, yellow, green, and black repeated from top of page to bottom. The student's wrote with the letters sitting on the green line. This "color coding" of the lines enabled the LD student to more easily see where to place the letters.

(2). At the end of each day's instructional time the student was asked to produce a sample of the day's lesson writing on a blank 8" by 11" sheet of newsprint while his eyes were closed. This was merely a culminating activity to aid in the memory of letter formations and combining

processes.

(3). The student was able to reproduce the desired items 80 percent of the time when tested using the Zaner-Bloser Evaluation Scales for scoring purposes (scores of 1,2,or 3).

(4) Homework was assigned daily M-Th and checked on return by teacher and student using a plastic overlay to determine correctness of letters and areas of weakness and evaluated weekly using the Checklist of Written Expression (Appendix A).

SEQUENCE 1.

The student followed a difficulty sequence introduced in the following order, with the lessons or steps repeated as needed to produce adequate cursive handwriting in 80% of the samples.

Step # 1. Traced lower case individual letters

Step # 2. Copied lower case individual letters with sample

Step # 3. Reproduced lower case letters without pattern

Step # 4. Traced two combined lower case letters

Step # 5. Copied two combined lower case letters or words with pattern

Step # 6. Reproduced two combined lower case letters or words without pattern

Step # 7. Traced three or more combined lower case letters or words

Step # 8. Copied three or more combined lower case letters or words with pattern

Step # 9. Reproduced three or more combined lower case letters or words without pattern

Step # 10. Wrote complete sentence using legible cursive handwriting from manuscript sample

SEQUENCE 2

The student produced the following items in the letter sequence and order of introduction indicated to produce acceptable cursive handwriting samples 80 percent of the time when compared with the Zaner-Bloser Evaluation Scales.

Step 1. Began with lower case i, t, u, w, j, e,and l, in that sequential order

Step 2. The sequence introduced was lower case c, a, d, g, o and p

Step 3. The sequence introduced was lower case n, m, h, k, b, v, and y

Step 4. The last sequence of letters to be introduced were x, r, s, q, f, and z

This same sequence was followed with the introduction of capitals using them in combination with lower case letters to make appropriate words and phrases.

SEQUENCE 3.

The student was able to produce the following items

using the letter size, sequence and line colors in the order indicated successfully (Scores of 1,2, or 3) on cursive handwriting samples 80 percent of the time when compared with the Zaner-Bloser Evaluation Scales (1984).

Step # 1. Introduced lower case letters first.

Step # 2. Began with 3/4" letters on red, yellow, green lines

Step # 3. When letters were mastered switched to 1/2" letters on red, yellow, and green lines

Step # 4. When words were mastered switched to 1/4" letters on red and green lines

Step # 5. When mastered switched to 1/4" letters on dark blue interspersed with light blue lines

Step # 6. Introduced capitals in same sequence and order

Step # 7. After mastery of all combinations switched to regular notebook paper

CHAPTER V.

RESULTS, CONCLUSIONS AND RECOMMENDATIONS

Presentation and Analysis of Results

Relative standards of performance were met for all objectives by those students who participated in the program. Seventy five percent of the second grade students and 100 percent of the third grade students were able to produce average or above cursive handwriting samples 80 percent of the time. The remaining 25 percent of the second grade students achieved fair cursive handwriting samples.

In September 1984 all students included in the program had adequate scores on the five subtests given in the Slingerland Screening Tests for Identifying Children with Learning Disabilities (less than 12 errors per subtest)(Table 2).

Table 2
Student Error Results in Percentage Based on Number Errors per Subtests of the Slingerland Screening Tests Screening Tests for Identifying Children with Specific Language Disability

	Number of Errors per Test				
	1-3	4-6	7-9	10-12	13+
Subtest 1	12	27	34	27	0
Subtest 2	44	50	0	6	0
Subtest 3	77	22	0	0	0
Subtest 4	66	17	17	0	0
Subtest 5	9	36	18	37	0

Although a few of the students had some idea of how to make some individual letters none could join them together. None of the students had acceptable cursive handwriting skills (scores of 3, 4,or 5 on the Adaptation of the Checklist of Written Expression (Poteet, 1980)(Table 3) and scores of 3,4,or 5 on the Zaner-Bloser Evaluation Scales (1984) (Table 4).

The second grade students who completed the total program during the practicum experience had average or above skills in the individual letters and joining of most letters. However, some difficulty in joining a few of the letters to others was evident (Tables 3 and 4). These students had no other training in cursive handwriting

except for that provided during the twenty minutes daily in the author's program.

The third grade students had a higher quality of cursive handwriting after completing the program than the second grade students (Tables 3 and 4). This may have been due to the input of the regular teachers who were also working on handwriting in their regular classrooms along with the additional training occurring in the LD class. Third grade is the normal grade level at which cursive handwriting is taught in the regular classroom in the Dade County School System.

Table 3
Student's Results in Percentages Based on Zaner-Bloser Evaluation Scales (1984)

	Quality Handwriting Levels				
	1	2	3	4	5
Second grade students					
Pretest	100	0	0	0	0
Posttest	0	25	33	25	17
Third grade students					
Pretest	58	42	0	0	0
Posttest	0	0	28	28	44

Table 4
Student's Results in Percentages Based
on Adaptation of Checklist of Written Expression.

	Quality Handwriting Levels				
	1	2	3	4	5
Second grade students					
Pretest	94	6	0	0	0
Posttest	0	0	29	19	52
Third grade students					
Pretest	76	24	0	0	0
Posttest	0	0	7	34	59

The author's LD Resource class consisted of seven third grade students, 12 second grade students, and seven fourth grade students. Only the second and third grade students were included in the practicum, however, the fourth grade students upon seeing the others working with the materials wanted to be able to use them. For this reason these students were allowed to use the program as a reinforcement for their normal handwriting program but were not included in the final statistics.

Those students who had started out with some knowledge of the cursive letter formation acquired the skills faster and were better than those who had no idea of what to do.

This appeared to be a logical conclusion.

Those students with the better scores on the Slingerland Screening Tests for Identifying Children with Learning Disabilities made faster and better progress in acquiring the cursive handwriting skills . This verified the statement by Kaufman and Biren (1976-77) that high error scores on these five subtests have shown significant correlation with poor handwriting.

During the nine months of program implementation there was an attrition rate of approximately 10 percent in the total class make-up. These students were withdrawn from the program because the families had moved out of the school boundaries.

Several colleagues were aware of the program's existence and asked to borrow some of the materials to use with their students. These students were followed on an observation basis only and were felt by their teachers to have made great strides in their cursive handwriting skills.

The "color coding" of the lines was especially useful when instructing the students. Later as they verbalized the instructions to themselves the green colored line served as a base on which to set the letters.

The tracing of the letters on the plastic with a pen enabled the letters to "flow" rather than to drag as is sometimes felt with a pencil and paper. This also enabled

the students to "wipe away failure" with no fear of it coming back later. The added kinesthetic mode of learning which this gave helped engrave the correct letter formations and joinings internally for each child. Later when they did their homework using the same letter or letters they had practiced earlier in the day usually gave sufficient training to allow them to produce it at a later date with no further training.

The added review of the learned letter by writing the letter on a blank paper with their eyes closed was found to be too difficult for the students and was eliminated after several weeks attempts.

The behavior modification program set up by the instructor gave the students an added incentive for doing their best work both in class and on their homework. As the smiling faces and stars mounted up the students took great pride in counting their earned awards and relating what they had "bought" for their own stars. As each semester came toward an end they counted their smiling faces and estimated just how many more they would need to earn a piece of pizza at the pizza party which was to be held. The desired number was 25 or more smiling faces to be included.

Conclusions

The cursive handwriting program was felt to be highly successful. All students included in the cursive handwriting skills program made progress in their ability to produce an average or above sample.

Those making the most progress were the oldest students and those who also had other teaching input or previous knowledge of how cursive letters should be formed. This may indicate either the need for a longer instruction time or more frequent instruction periods.

The ability of the students to progress through the program at their own rate was a great advantage to the program. That way if one student was absent or needed to have extra practice on a particular letter or group of letters the whole group was not affected. Also, some amount of competition developed as a result of this. The level of competition was kept at a minimum, however, since it was felt that the student's handwriting would suffer if the students were interested in speed rather than quality. The students were easily able to accept this rationale and concentrate on correctness of letters and neatness of their papers.

All students indicated pleasure at being included in the program and often requested additional instruction. However, due to the curriculum restrictions this was not

permitted. Those students not chosen to be included in the research were allowed to use the materials and techniques as it was felt by the author that they would benefit from the training.

Recommendations

The following recommendations should be considered when establishing future cursive handwriting skills programs:

(1) In the future the program should be set up with a two pronged approach. This is recommended since it was felt that the program could have had as its goal for LD students either (1) initial teaching, or (2) reinforcement of the regular classroom program. LD students in particular need more repetition and reinforcement than the average child in all areas of learning, but particularly in handwriting where they are expected to produce a clear, clean and uncluttered product which is extremely difficult for them.

(2). This program appears to be especially useful for the resource or part time LD student who does not exhibit severe disabilities in the visual discrimination and memory for letter forms and word forms, visual-visual perceptual-memory, visual-motor copying, or visual-motor/visual-perceptual memory areas as tested on the first five subtests of the Slingerland Screening Tests for Identifying Children with Specific Language Disability.

(3) The cursive handwriting program as designed by the author has been recommended to be continued in future years by LD students and regular education students who exhibit a need for added kinesthetic training in the area of cursive handwriting skills.

(4) It is recommended that a behavior modification be incorporated into other areas of the educational program. The behavior modification program as set up by the author has been adapted and adopted by the other ESE teachers in the school.

Disseminations

The cursive handwriting skills program will be available to any regular or ESE teachers desiring to make use of the materials. The program has already been used by two other ESE teachers and has been suggested to other teachers for possible use in coming years.

An inservice program has been included during teacher workdays for new teachers who plan to use the program in their classrooms. The inservice program includes instructions in using the techniques and materials as well as a rationale for the inclusion of these in their own overall handwriting program.

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APPENDIX A

CHECKLIST OF WRITTEN EXPRESSION

STUDENT'S NAME_____GRADE____

TEACHER/S_____DATE____

PENMANSHIP
(Rating: 1= poor, 2= fair, 3= average 4= good, 5= excellent

	1	2	3	4	5
A. Spacing on page					
B. Spacing of sentences					
C. Spacing of words					
D. Space of letters					
E. Appropriate slant					
F. Letter formation					
G. Pressure on paper					
H. Pencil grip					